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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/995,336

11/27/2001

Bernard Etkin

ETK 4910.1

9666

7590

12/19/2003

George A Seaby
Seaby & Associates
603 - 880 Wellington Street
Ottawa, ON K1R 6K7
CANADA

EXAMINER

CHAPMAN JR, JOHN E

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,336

Applicant(s)

ETKIN ET AL.

Examiner

John E Chapman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5,8,10-13,17,18,21-27,31 and 34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 2-5,8,10-13,17,18,21-27,31 and 34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 2-5, 8, 10-13, 17-18, 21-27, 31 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “high amplitude” in claims 21, 23, 31 and 34 is a relative term, which renders the claims indefinite. The term “high amplitude” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. Likewise for “small amplitude,” “low frequency” and “high frequency.”

3. Claims 2-5, 8, 10, 12, 13, 21, 23, 24, 31 and 34, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kienholz (6,196,514 or 2000) in view of von Kann et al. (5,804,722).

Regarding claim 34, Kienholz discloses an airborne vibration isolation system for a payload 3 comprising a passive isolation mount 5 and an active isolation mount 1 carried by the passive mount. The passive mount attenuates vibrations in a frequency range (e.g., 2-20 Hz in column 5, line 50) that is “low” relative to payload vibrations. The active isolation mount attenuates vibrations in another frequency range (e.g., 1-9 in col. 15, line 2) and may provide active damping at higher frequencies (col. 8, lines 12-14). To call the passive system 5 a “coarse

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stage” and the active system 1 a “fine stage” is purely semantic. Hence, the only difference between the claimed invention and the prior art consists in providing a gravity gradiometer in the payload 3. It is well known in the art to provide vibration isolation for a gravity gradiometer mounted in an aircraft, as taught by Van Kann et al. (col. 2, lines 17-20). Accordingly, it would have been obvious to provide a gravity gradiometer in the payload 3 of Kienholz in order to provide vibration isolation for airborne measurements of the gravity gradient.

Regarding claim 2, crossed dumbbell type gravity gradiometers are well known in the art, as illustrated in Fig. 6 of the applicant, and merely to use such a gravity gradiometer for airborne measurements of the gravity gradient would have been obvious to one of ordinary skill in the art.

Regarding claim 3, the passive isolation mount 5 inherently possesses a natural frequency. The limitation of exceeding the “high frequency” is not given any weight in view of the ambiguity of the expression.

Regarding claim 4, the passive isolation mount 5 inherently controls displacement of the active system 1.

Regarding claim 5, all aircraft have a flight control system.

Regarding claim 10, the passive isolation mount 5 includes an accelerometer 31 and position sensor 27 for controlling the position of the active system via actuators 21 and 23.

Regarding claim 12, the passive isolation mount 5 includes a position sensor 27 for controlling the position of the active system via actuators 21 and 23.

Regarding claims 21, 23 and 31 the limitation of “said high frequency being less than said minimum frequency of said vibrations” is not given any weight in view of the ambiguity of the expression.

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Regarding claim 24, it is well known in the art to monitor the position of an aircraft using either an INS or GPS when conducting an airborne measurement of the gravity gradient.

4. Applicant's arguments filed December 8, 2003 have been fully considered but they are not persuasive. Applicant argues that Kienholz is concerned with vibration isolation only, and not with isolating low frequency, large amplitude displacements of a payload or instrument. However, "low frequency, large amplitude displacements" are vibrations, albeit vibrations having a low frequency and a large amplitude. Thus, Kienholz's concern with vibration isolation does not preclude isolating low frequency, large amplitude displacements of a payload or instrument. Note col. 5, lines 1-3, wherein Kienholz is concerned with low frequency variations due to aircraft maneuvering, which is a well-known cause of large amplitude displacements. Moreover, it is incumbent upon the applicant to show that the subject matter of the prior art does not possess the characteristic relied on. See *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). Accordingly, it is incumbent upon the applicant to show that the apparatus of Kienholz does not inherently isolate "low frequency, large amplitude displacements." Absent such a showing, the claims fail to distinguish over the prior art.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E Chapman whose telephone number is (703) 305-4920. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


John E Chapman
Primary Examiner
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